

What is claimed is:

1. A hollow rack shaft which is formed cylindrically by bending a substantially rectangular plate so that the parallel two sides are joined and in a part of the surface of which a row of rack teeth along a direction of the axis is formed, wherein:

said respective sides have complementary profiles composed of the continuation of a convex portion and a concave portion so that the sides are engaged when they are joined.

2. A hollow rack shaft according to Claim 1, wherein: the width of a part having the largest width of said convex portion is larger than the width of a part having the smallest width of said concave portion; and

hereby, said two sides are prevented from being detached.

3. A hollow rack shaft according to Claim 1, wherein: said convex portion and said concave portion mutually opposite are caulked; and

hereby, mutual gap is removed.

4. A method of manufacturing a hollow rack shaft which is formed cylindrically by bending the opposite sides of a substantially rectangular plate so that the sides are joined and in a part of the surface of which a row of rack teeth along a direction of the axis is formed, wherein:

a complementary profile composed of the continuation

of a convex portion and a concave portion is provided to said respective sides; and

the respective sides are joined owing to this profile when they are confronted so that they are not detached.

5. A method of manufacturing a hollow rack shaft according to Claim 4, wherein:

further, said convex portion and/or said concave portion of said joined sides are/is caulked to deform the boundary.

6. A hollow rack shaft which is formed cylindrically by bending a substantially rectangular plate so that the parallel two sides are joined and in a part of the surface of which a row of rack teeth along a direction of the axis is formed, wherein:

said plate is one plate acquired by welding a first plate for a rack teeth area for said row of rack teeth is to be formed and a second plate for an area except it.

7. A hollow rack shaft according to Claim 6, wherein: said first plate is thicker than said second plate.

8. A hollow rack shaft according to Claim 6, wherein: said first plate is made of material more satisfactory in hardenability than that of said second plate.

9. A method of manufacturing a hollow rack shaft provided a row of rack teeth along a direction of the axis in a part of the surface for forming a substantially rectangular

plate cylindrically by bending it so that the parallel two sides are joined, wherein:

said plate is one plate acquired by welding a first plate for a rack teeth area for said row of rack teeth to be formed and a second plate for an area except it.

10. A method of manufacturing a hollow rack shaft according to Claim 9, wherein:

said first plate is thicker than said second plate.

11. A method of manufacturing a hollow rack shaft according to Claim 9, wherein:

said first plate is made of material more satisfactory in hardenability than that of said second plate.

12. A hollow rack shaft which is formed cylindrically by bending a plate so that the two sides of the plate are joined and in a part of the surface of which a row of rack teeth along a direction of the axis is formed, wherein:

said rack shaft is provided with a first area and second areas on both sides of it;

in said first area, the row of rack teeth and a semi-cylindrical part on the reverse side are formed; and

in said two second areas, a complete cylindrical part is formed and at least one of the second areas has a diameter different from the diameter of the semi-cylindrical part in said first area.

13. A hollow rack shaft according to Claim 12, wherein:

the diameter of at least one of said second areas is smaller than the diameter of said first area.

14. A method of manufacturing a hollow rack shaft which is provide with a first area and a second area on both sides of it, in which in said first area, a row of rack teeth and a semi-cylindrical part on the reverse side are formed and in which in said two second areas, a complete cylindrical part is formed and at least one of the second areas has a diameter different from the diameter of the semi-cylindrical part in said first area, wherein:

a plate provided with a part with first width having width corresponding to the first area for said row of rack teeth to be formed and a part with second width corresponding to said second area and having narrower width than said part with the first width is plastically deformed cylindrically.